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(56) Documents cited
GB 2232182 A GB 2084411 A

(58) Field of search
UK CL (Edition K) E1D, E1G, E1S
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(54) Access chamber/junction box

(57) An access chamber suitable for use as a junction box comprises a generally rectangular liner set in an excavation 11 on a base. Concrete 12 is back-filled around the liner and a frame 14 – with a lid 13 – is set on top of the concrete.

The liner suitably comprises an injection moulded or vacuum- or pressure-formed plastics box having an open bottom to allow for drainage. Preferably the liner includes a bottom rim 3 extending inwardly or outwardly for bedding of the liner on the base and optionally an outwardly extending upper rim 4.

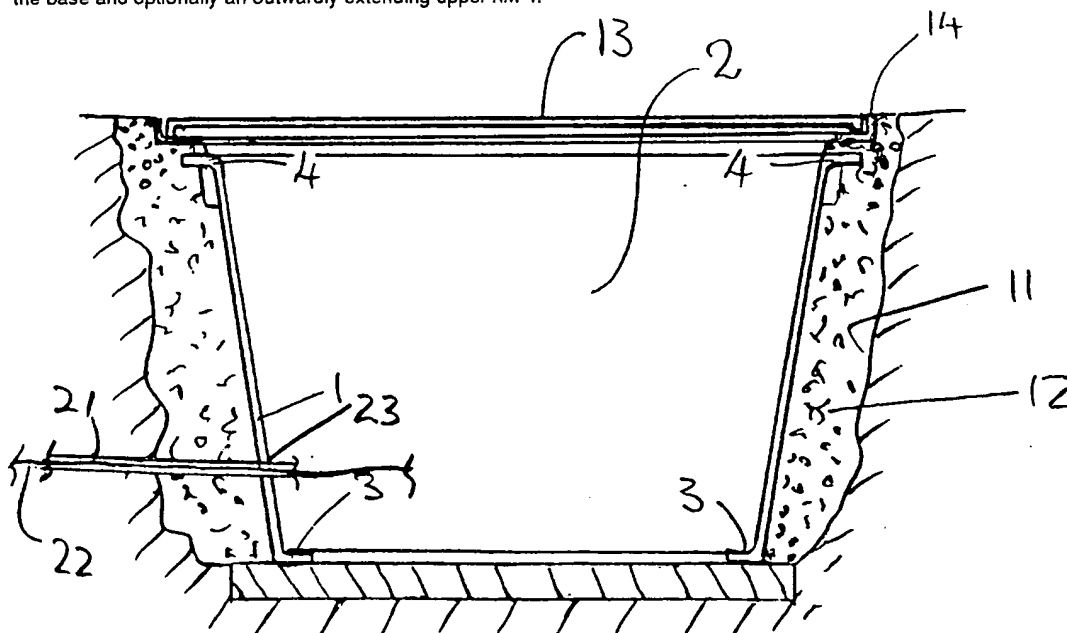


FIGURE 2

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

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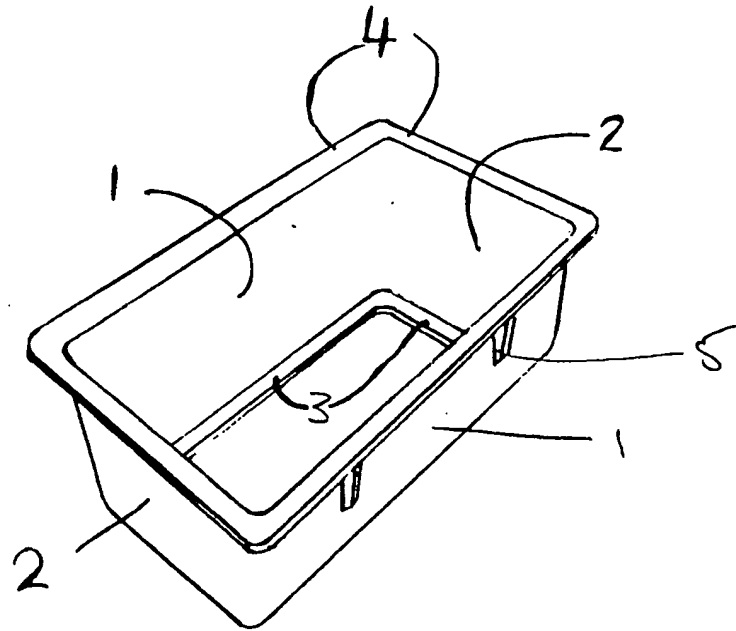


FIGURE 1

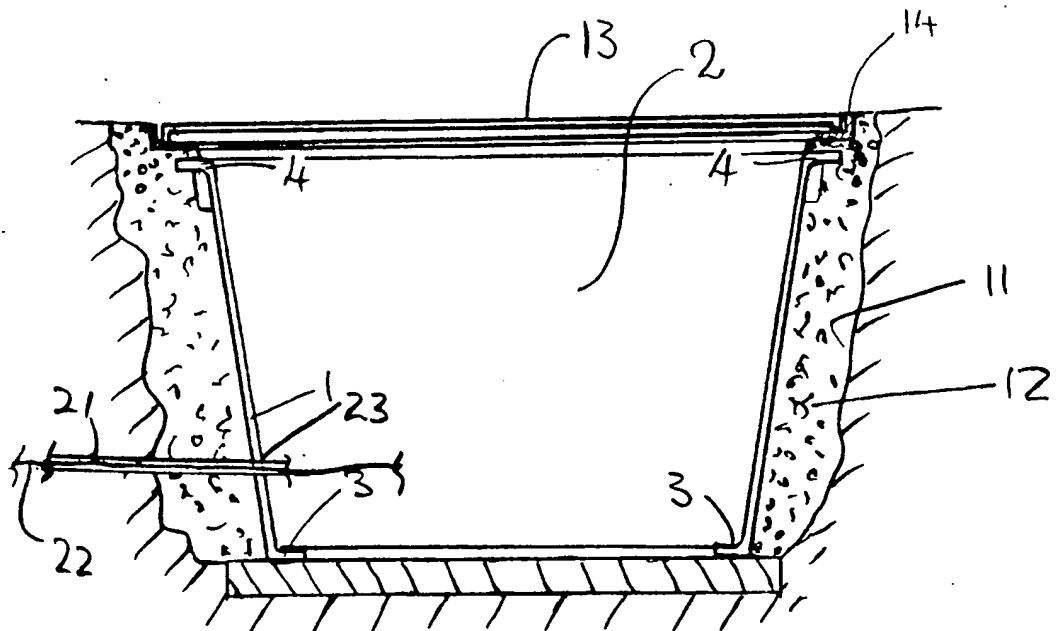


FIGURE 2

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JUNCTION BOX FORMATION

The present invention relates to a method of formation of junction boxes.

5 Conventionally, junction boxes as used for utility connections, for instance for connections of electricity supply mains, have been made by excavation of a hole in the ground in which a brick box is made. The surrounding hole is back-filled with earth and a manhole cover is cemented to
10 the top of the brick work. Brickwork is expensive and leaves a rough surface. The latter is particularly disadvantageous where the connections to be made are of a delicate nature, such as for cable television. Conventional concrete shuttering can be used. It reduces the cost, but
15 whether the shuttering is left in place or removed, the resultant working environment remains unsatisfactory.

The object of the invention is to provide a method of junction box formation which provides for fast and cheap formation and a reasonable working environment.

20 The method of junction box formation in accordance with the invention comprises:

- forming an excavation in the ground;
- placing a preformed liner sized to define the internal dimensions of the junction box in the excavation; and
- 25 back-filling the excavation around the liner with concrete.

The concrete back-filling may be of wet- or dry-mix concrete.

A concrete base may be preliminarily provided in the
30 excavation before the liner is placed in it. The base may be poured *in situ* or pre-cast.

Normally the junction box will be covered with a conventional frame and cover. This may be bedded with cement on an upper rim of the liner, but is preferably
35 bedded directly on the concrete back-filling.

In accordance with another aspect of the invention, there is provided a liner comprising an open top and sidewalls and which is preformed and adapted for use in the method of the invention.

5 Conveniently the liner is of injection moulded plastics material. Alternatively, it may be of vacuum- or pressure-formed plastics material. Preferably it has an open bottom to allow for drainage. A bottom rim extending inwardly or outwardly is conveniently provided for bedding of the liner
10 in the excavation - on the base where provided - prior to back-filling. The liner may have an outwardly extending upper rim. This facilitates bedding of a frame and cover for the junction box. Conveniently the liner tapers inwardly downwards - in the use position of the liner.

15 To help understanding of the invention, a specific embodiment thereof will now be described by way of example and with reference to the accompanying drawing:

Figure 1 is a perspective view of a junction box liner of the invention; and

20 Figure 2 is a cross-sectional view of the liner after use in accordance with the invention in the formation of a junction box.

The liner is generally rectangular with two long sides 1 and two short sides 2. The sides taper downwardly inwards
25 at 7° to the vertical when the liner is set level. The box has the following nominal dimensions:

Height	260mm,
Width	450mm,
Length	600mm.

30 The lower edges of the sides have inwardly extending rims 3 of 19mm width and the upper edges have outwardly extending rims 4 of 32mm width. The sides have a wall thickness of 4mm. Stacking ribs 5 are provided.

Figure 2 shows the liner having been placed in an
35 excavation 11 on a concrete base 110. Around the liner,

concrete back-fill 12 has been poured to just above the level of the upper rim 4. A cover 13 has its frame 14 bedded on the top of the back-fill concrete above the upper rim 4.

5 Also shown in Figure 2 is a conduit 21 through which a typical cable 22 can be introduced in the junction box for connection to other such cables (not shown). The conduit is conveniently installed in an aperture 23 drilled in the side wall 1, both operations being carried out before pouring of
10 the concrete back-fill 12. The conduit will extend from the junction box in a trench which is conveniently, but not always, dug before the concrete is poured.

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CLAIMS:

1. A method of junction box formation comprising the steps of:
 - 5 forming an excavation in the ground;
placing a preformed liner sized to define the internal dimensions of the junction box in the excavation; and
back-filling the excavation around the liner with concrete.
- 10 2. A method as claimed in claim 1, wherein the concrete back-filling is with wet-mix concrete.
3. A method as claimed in claim 1, wherein the concrete back-filling is with dry-mix concrete.
4. A method as claimed in claim 1, claim 2 or claim 3,
15 wherein a concrete base is preliminarily provided in the excavation before the liner is placed in it.
5. A method as claimed in claim 4, wherein the the base is of concrete poured *in situ*.
6. A method as claimed in claim 4, wherein the the base is
20 of pre-cast concrete.
7. A method as claimed in any preceding claim, wherein a frame and cover is set over the liner after the back-filling step.
8. A method as claimed in claim 7, wherein the frame is
25 bedded directly on the concrete back-filling.
9. A method of forming a junction box substantially as hereinbefore described with reference to the accompanying drawing.
10. A liner for a junction box, the liner comprising an
30 open top and sidewalls and being preformed and adapted for use in the method of any one of the preceding claims.
11. A liner as claimed in claim 10, the liner being of injection moulded or vacuum- or pressure-formed plastics material.
- 35 12. A liner as claimed in claim 10 or claim 11, including

an open bottom to allow for drainage.

13. A liner as claimed in claim 10, claim 11 or claim 12,
including a bottom rim extending inwardly or outwardly for
bedding of the liner in the excavation - on the base where
5 provided - prior to back-filling.

14. A liner as claimed in any one of claims 10 to 13,
including an outwardly extending upper rim.

15. A liner as claimed in any one of claims 10 to 14,
wherein the liner tapers inwardly downwards - in the use
10 position thereof.

16 A liner for a junction box substantially as
hereinbefore described with reference to the accompanying
drawing.

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Patents Act 1977
Examiner's report to the Comptroller under
Section 17 (The Search Report)

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9120469.3

Relevant Technical fields

(i) UK CI (Edition K) E1G; E1S; E1D

(ii) Int CI (Edition 5) E02D

Databases (see over)

(i) UK Patent Office

(ii)

Search Examiner

D HAWORTH

Date of Search

6 JANUARY 1992

Documents considered relevant following a search in respect of claims

1-9

Category (see over)	Identity of document and relevant passages	Relevant to claim(s)
X	GB 2232182 A (CRAIG) see Claim 26	1-3, 7 and 8 at least
X	GB 2084411 A (RYANS)	1-3, 7 and 8 at least

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